

Sovereign Hill Education

Simple Machines Complex Machines

Useful Tools on the Goldfields Teacher Notes



To be used in conjunction with the Simple Machines Workbook

Contents of Teacher's Notes

- 1 How to use the workbook
- 2 Invention sheet to accompany
Pre-excursion activity 1: *Dating*
- 3 Excursion activity answers for Excursion Activity
1-Trail 1: *Mastering Machines and Excursion Activity*
2-Trail 2: *Businesses of the Goldfields*
- 4 Post-excursion Activity 2: *Golden Machines answers.*
- 5 Websites

1 How to use the workbook.

At school or visiting

The workbook can be used as an accompaniment to a visit to Sovereign Hill, as well as independently in the classroom. The pre-excursion, excursion and post-excursion labels can be used as a guide. The trials can also be used completely independently of this topic if you wish.

Excursion suggestions

Students will not be able to complete all excursion activities in one visit to Sovereign Hill. Rather you, or preferably your students, should select an area of interest and choose the relevant activity. A gold pour demonstration and Red Hill Mine tour are also recommended.

Contents of workbook

- 1 Pre-excursion Activity 1: *Dating*
- 2 Pre-excursion Activity 2: *Life and Times*
- 3 Excursion Activity 1- Trail 1: *Mastering machines*
- 4 Excursion Activity 2- Trail 2: *Business of the Goldfields*
- 5 Excursion Activity 3: *Business Detail*
- 6 Post-excursion activity 1: *Machines on the Diggings: reflection*
- 7 Post-excursion Activity 2: *Golden Machines*

Change is good

The workbook has been written in Microsoft Word© format to allow you to create a workbook suitable for your students. Change the language, activities and instructions to suit your students.

Sovereign Hill Education Service's *Authentic Learning Beyond The Classroom* may give you some ideas on how to allow your students to have greater ownership over their work on excursions.

http://www.sovereignhill.com.au/education/authentic_learning.shtml

Right or wrong

Many of the activities can have a range of answers. If your students can justify them they should be acceptable. The answers included are where only one answer is possible.

2 Invention sheet to accompany Pre-excursion Activity 1: Dating

For teachers: Photocopy and cut these out for students
to sort for Dating.

Invention	Year
First lamps	40,000 BC
Archimedes screw	Between 280-210 BC
First compass	Between 221-206 BC
Gunpowder	700-800 AD
First spectacles	Between 1268 and 1289 AD
Printing press	1456 AD
Compound microscope	1590 AD
First telescope	1608 AD
Flush Toilet	1707 AD
Spring mattresses	1820's AD
Electric upright vacuum cleaner	1826 AD
Modern safety pin	1849 AD
Self-rising flour invented	1852 AD
Lead-acid cell (alkaline battery)	1859 AD
Cola-Cola syrup	1886 AD
Typewriter	1860 AD

3 Excursion Activity Answers Mastering machines

Machine Name	Description Letter
The Whim	H
Puddling Machine	K
Californian Pump	C
Windlass	F
Windsail	B
Cradle	L
Flume	I
Chilean Mill	E
Poppet Head	D
Beam Pump	A
Engine & Boiler	J
Battery	G

Businesses of the Goldfields

Business Name	Machine Letter
Blacksmith	A
Candle Works	B
Foundry	C
Wheelwright	D

5 Websites

Many of the activities can have a variety of answers. Go to the links for background information on these activities. Some sites have other information you may find useful in teaching this topic.

http://www.sovereignhill.com.au/education/notes_sec_mining.shtml

This explains some of the mining technology on the goldfields.

<http://www.sovereignhill.com.au/education/drawings.shtml>

This page has diagrams of the technology used on the goldfields. The name of the drawing appears at the end of the web address.

<http://www.sbs.com.au/gold/story.html?storyid=119>

Again this goes through technology on the goldfields. It also has an interactive feature at the bottom of this page showing different patents.

<http://www.slv.vic.gov.au/slv/exhibitions/goldfields/techniq/techniq.htm>

State Library of Victoria site. Artwork from S.T. Gill showing different mining techniques with descriptions.

<http://edheads.org/activities/simple-machines/>

This is an interactive site for students on different simple machines around the home. It also contains teaching resources.

<http://www.mos.org/sln/Leonardo/InventorsWorkshop.html>

This site has information, as well as online and classroom activities on simple machines. Links to these activities are at the bottom of the page. *The Elements of Machines* explains the different types of simple machines. *Gadget Anatomy* is a simple test for students, while *Leonardo's Mysterious Machinery* has an activity matching some old designs to modern inventions.

